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UNDERSTANDING OF UNDERSTANDING IN SCHOOL LEARNING: A CRITICAL ANALYSIS

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ABSTRACT

This paper analyses the significance of understanding of understanding in school learning.

The paper, largely based on research findings and the author's personal experiences, briefly examined the concept of understanding, factors influencing understanding, methods of assessing understanding and finally analyzed understanding of understanding in school learning and the implications thereof.

Introduction

A number of research studies such as those by Ziff (1972, 1984), Yager and Yager (1984) have shown that understanding is crucial in academic achievement. Many students have been observed not to do well either in their school learning or in examinations mostly because of poor understanding of concepts. Thus, while understanding what is being learned is perhaps the most important goal of school learning, in many instances, very little attention has been given to this aspect, yet without understanding, there is no meaningful learning. Many research studies such as those by Trigwell and Prosser (1991) have shown that meaningful teaching involves teaching students effective learning strategies such as how to learn new information and skills, how to remember, think and how to motivate themselves yet, these strategies, which ensure that students learn with understanding, are seldom taught or stressed in our schools.

While there are many research studies that indicate that lack of understanding of concepts is perhaps the main cause of poor academic achievement, so far there is not much literature discussing and shedding more light on the meaning and implications of understanding of understanding for school learning. Thus, instead of investigating what has already been investigated by many researchers, the writer felt it more important to discuss the meanings and implications of these research findings.

Methodology

This paper is based on both review of literature and personal experiences. Largely the paper draws on research studies that were conducted in various countries on how best meaningful learning can be promoted. The various research findings were blended with personal experiences and then analyzed. Implications for both teaching and learning were then discussed

The Concept of Understanding

What is understanding? How do teachers understand pupils' understanding? Do pupils understand that they understand/do not understand?

In many circles, the meaning of understanding remains tacitly assumed. Many scholars generally believe/think that they know its meaning - usually without much thought of the full range of variables that influence understanding. Understanding is often thought of as the ability to grasp with the intellect, ability to know or recognise the meaning of something. It is also viewed as the ability to think, learn or judge. Such views tend to be limited because they fail to give full recognition to the fact that understanding is a function of meaningfulness. It is the construction of meaning; hence, it only results from meaningful learning. It is more than the mere meanings of terms and the mere recall of information. Understanding is personal and is influenced by a number of factors.

Factors Influencing Understanding

There are many facets to understanding. This means that how learners capture meanings is influenced by a number of variables/factors. Some of these factors are the instructional methods used. Some methods promote understanding which others lead students to rote - learn materials - with little or no understanding. Thus, teaching methods differ significantly in the experiences they provide to the students, hence, methods that promote learning rather than teaching should be used. Other factors include the nature of the materials, prevailing environmental and emotional conditions, state of the learner, the relationship between the learner and the teacher, the extent to which learner freedom is practised (type of authority) ability to recognise order within the materials, ability to recall relevant past experiences, one's I.Q.; home environment, interest, socio-economic factors, cultural orientations, motivation etc. These factors influence the meanings that are constructed and therefore the different degrees of understanding by different individuals since these factors are different for and in different individuals. For example, no two individuals can be in exactly the same

emotional state. This also means that their understanding of what is being learned or taught is most likely to be different; yet very few educators take note of such issues.

The Concept of Understanding of Understanding

Simply expressed, understanding of understanding refers to the fact that learners should be able to realise whether they understand the materials/concepts before them or not. It is this ability to realise gaps or lacuna in one's knowledge that is the chief promoter of understanding. Gaps in knowledge make students realise what they do not know or do not understand. This leads students to the realisation of what they need to know. Thus, understanding of understanding enables students to detect their own shortcomings in understanding and if these students are sufficiently intelligent, they can provide or at least start looking for solutions to their problems.

What the above indicates is that understanding of understanding enables the student to know his strengths and weaknesses and hopefully to devise more appropriate learning strategies. It is the writer's contention that unless students understand/know what they know and what they do not know, then learning time is not fully and correctly utilised. Students waste time "learning" but without a clear idea of what they must know or master.

Pramling (1988) found that presented with learning materials, some students do not only think about the content before them; they also think about their own thinking about the content. This shows that presented with a learning task, many students first consider their own understanding of the material. They begin to question the adequacy of their understanding/thinking to solve or deal with the problem at hand. "Do I understand enough to understand this material before me?" If their understanding/thinking is seen as adequate, they approach the task with confidence and this is likely to positively influence their performance. This means that a teacher who helps students gain understanding or who gives students confidence in their own understanding has half-won the battle. Unless our students understand what they are learning or have confidence in their ability to understand, then we are achieving very little as teachers. Many successful students have been observed to be those who are either very clear about their potentials and limitations or those who approach their work with an "I can do it" attitude. This shows that understanding of understanding as well as the psychological conviction in one's ability to tackle a task play a crucial role in school learning.

It is perhaps unfortunate that while understanding is the major goal reflected in school

syllabuses, some modes of assessment, especially in primary school examinations, which largely employ multiple-choice and short answer questions, misplace this priority. There is heavy reliance on recall and rote learning and this tends to betray the goal of learning for understanding. Very often, secondary school teachers complain that Form I pupils have very poor understanding of concepts in general. There is therefore need to teach students for understanding by making them aware of gaps in their thinking and how to fill these gaps. The writer submits here that this is perhaps one of the many points of departure between education presently offered in Zimbabwe and one many would want to see being offered. Most of our students go through the schooling system with very little knowledge and skills because their learning did not involve understanding.

Studies have demonstrated that in order to learn for and/or with understanding, students need to be helped to adopt strategies unique to their learning needs because individuals do not understand things in exactly the same way. Studies by Zenhausen (1982); Jasonbeck (1984); Brenman (1985) and Kolb (1987) show that when students are taught in ways that respond to their unique ways of understanding, they attain significantly higher scores. Teachers must therefore be aware of the fact that each student has a unique way of understanding; hence, take the trouble to isolate each student's unique way of understanding material (e.g. through discovery, being lectured to, seeing concrete objects, feeling objects etc) and then approach the individual as such. Only then can most of our students learn with understanding.

Sometimes some students face problems in understanding because their understanding of understanding betrays them. If, for example, understanding to them means memorisation of material, they will approach learning as such and little is therefore gained from the learning experience. If on the other hand, their understanding of learning is that of an active process, they will engage in active construction of knowledge, integrating new materials with prior knowledge and injecting personal views in search of personal meaning. Ausubel (1968) strongly believes that prior knowledge is indeed necessary for the achievement of understanding but he concedes that organisation of such knowledge is in fact more important than its amount. The way previous knowledge is organised determines the different extents/degrees of understanding. It is indisputable that all students have and do bring prior experiences to learning situations but the extent to which these experiences will aid student understanding will largely depend on how these experiences are organised. Teachers must note that while some students can organise their own experiences to aid understanding, others cannot; hence, they need assistance.

To note therefore is that in any learning episode, students achieve different degrees of understanding. Some students gain no understanding, some partial understanding while others gain full understanding. Many research studies have shown that those who gain real understanding are between 10% and 60% in any learning episode. This means that a number of students "come out" of the lesson with little or no understanding. When then do they achieve understanding or do they ever achieve it?

Some students' understanding of materials only occurs later on when such students revisit the materials either on their own, with peers, with family members etc. This is when understanding of understanding plays a vital role. Students who realise that they do not understand the material will seek help while those who do not understand will not realise the gaps in their knowledge, and hence, may not seek help. Such students do not understand that they do not understand. Teachers should also understand that there may be some students who realise that they do not understand but may avoid seeking help. The teacher must be quick to detect such pupils and offer assistance. However, if the teacher is friendly and helpful, many students often pick the courage to seek help from him. Very often therefore, students' efforts to achieve understanding may be thwarted by teachers - how they present themselves to students and how they present learning materials. A research study by Entwistle and Ramsden (1983) has shown that the way students are taught has effect on how they approach and consequently understand their work.

Teachers should teach for understanding rather than for reproducing. Teaching for understanding basically involves the creation of an enabling environment, that is, an environment where students are free to explore, to engage in independent study, to ask and answer questions etc. Build in discussions within lessons but be certain that all pupils can handle such discussions - otherwise for some, direct teaching or assisting would be more beneficial. A good teacher is one who converts students' learning problems into learning materials by making these problems the focus of discussions.

Methods of Assessing Understanding of Understanding

Students' understanding of understanding can be assessed either intrinsically or extrinsically. Those students who understand understanding, that is, what it involves, assess their own understanding intrinsically. Such students recognise their understanding for themselves. They often volunteer to help others. Such students often offer adequate or comprehensive explanations to issues, are able to talk about and through materials and they feel at ease in discussions.

On the other hand, those who do not understand understanding assess themselves extrinsically. They use feedback from significant others such as teachers and peers. Thus, they depend on accreditation from others for them to know whether they understand or not. Significant others' comments on their work such as written exercises, oral answers to questions etc., help them to assess their own understanding. For such students, reinforcement is of great aid to greater effort and possibly to better understanding. Simonson (1985) recommends revision or repetition, which he calls the mother of all study, to enhance understanding for all groups of students. Learners must make effort to achieve understanding by going over their notes, writing tests, consulting textbooks, teachers, peers as well as by asking and answering questions.

Conclusion

It must be noted that students feel good when they understand and when they know that they understand but feel frustrated or depressed when they fail to achieve understanding. Such depression further blocks understanding in future learning episodes, possibly leading to deterioration in school achievement. Teachers must also remember that understanding involves grasping meanings and that meanings are embedded in words. Once students do not understand the words/language used either by the teacher or in textbooks, we may as well forget about promoting understanding among our students. The writer once asked "what is 8 more than 6?" to a Form II class and discovered that many of them failed to give the correct answer simply because they did not understand the meaning of the question.

In sum, teachers should endeavour to develop an understanding of understanding among students. Students who have an understanding of understanding tend to perform better because such students realise gaps in their own knowledge and therefore make effort to bridge these gaps. These students are therefore self-directed, they can even assess their own progress. Such students have learned how to learn - which, arguably, is the goal of all learning.

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